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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/084,928	03/01/2002	Kazuo Fujibayashi	03500.016243	7120
5514	7590	12/02/2003	EXAMINER	
FITZPATRICK CELLA HARPER & SCINTO 30 ROCKEFELLER PLAZA NEW YORK, NY 10112			MEYER, DAVID C	
			ART UNIT	PAPER NUMBER
			2878	

DATE MAILED: 12/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/084,928		Applicant(s) FUJIBAYASHI ET AL.	
	Examiner David C. Meyer		Art Unit 2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on 16 September 2003.

2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-5, 7-23 and 25-45 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☒ Claim(s) 29-33 and 35-45 is/are allowed.

6) ☒ Claim(s) 1, 2, 4, 5, 10, 13-16, 22, 23, 25, 26 and 34 is/are rejected.

7) ☒ Claim(s) 3, 7-9, 11, 12, 17-21, 27, 28 and 34 is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some c) ☐ None of:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.

13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 a) ☐ The translation of the foreign language provisional application has been received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____	6) <input type="checkbox"/> Other: _____

DETAILED ACTION

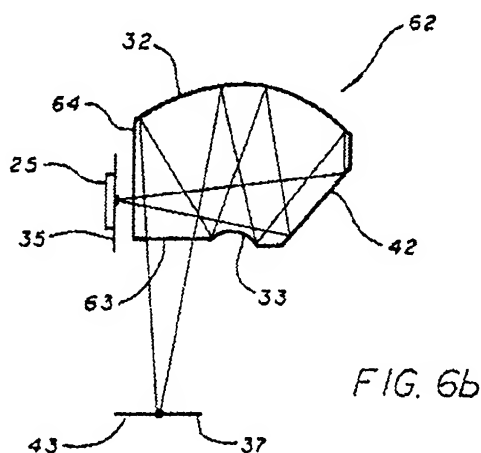
Response to Arguments

1. Cancellation of claims 6 and 24 is duly acknowledged by the Examiner.
2. Applicant's arguments filed September 16, 2003 have been fully considered but they are not persuasive.
3. With regard to the Applicant's traversal of the rejection of claim 1 under 35 U.S.C. 102(b) in view of Schmidt, the Examiner maintains that Schmidt discloses the invention as claimed. The Applicant attempts to distinguish the instant invention by reciting a new limitation, wherein the system of claim 1 has "an angle of field". First, the Examiner observes that "angle of field" is not properly defined anywhere in the specification. Claim 1 does not make clear with respect to what the "angle of field" is defined. Hence, any angle formed when a light ray intersects an optical surface could be called an "angle of field".

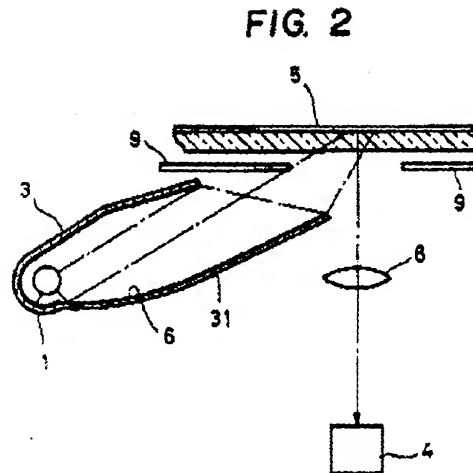
The Applicant argues that Schmidt "is a telecentric system in which the principal rays are in parallel with an optical axis" (page 19). The Examiner must disagree. On page 55 in the specification, the Applicant provides the following definition of an off-axial system:

A curved surface of which the surface normal does not coincide with the reference axis at a point whereat the reference axis defined as described above is defined as an off-axial curved surface, and an optical system including the off-axial curved surface is defined as an off-axial optical system. (However, when the reference axis is simply bent by a planar reflecting surface, the surface normal again does not coincide with the reference axis, but yet the planar reflecting surface does not spoil the symmetry of aberration and therefore it is excluded from the subject of the off-axial optical system.)

Based on this definition, it would seem that the invention of Schmidt constitutes a proper off-axial optical system, wherein surfaces 32 and 33 have curvature and wherein they reflect reference rays such that they do not coincide with a normal surface occurring at the point of incidence. Hence, Schmidt does not constitute a "telecentric system" as the Applicant claims. (See Fig. 6b of Schmidt.)



4. With regard to the Applicant's traversal of the rejections of claims 1, 4, and 23 under 35 U.S.C. 102(b) and 103(a) in view of Imamura, the Examiner maintains that the instant invention is disclosed by or is obvious in view of Imamura. The Applicant argues that the reflector in Imamura performs "a task different than that of the image optical element of claims 1, 4, and 23" (page 19). The Examiner must disagree. Claim 4 recites "an imaging optical element for imaging image information on the surface of the original on a line sensor". Claim 23 recites "an imaging optical element for causing the image information on the surface of the original to be imaged on a line sensor". By directing light from a lamp 1 onto an original 5, the reflector 3 causes image information on the original to be imaged on a sensor 4. (See Fig. 2 of Imamura.)



The Applicant further argues that "an angle of field between the lamp 1 and the original picture 5 cannot be defined" (page 19). Claims 1, 4, and 23 do not make clear what the angle of field is or how it is defined relative to the different parts of the system. Hence, the Applicant's argument on this point is moot, and any angle formed when a light ray intersects an optical surface of the reflector could be called an "angle of field".

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1, 4, and 23 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the

invention. Claims 1, 4, and 23, recite an "angle of field". However, the specification does not define "angle of field" or describe it in relation to the other parts of the system.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1, 4, and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1, 4, and 23 recite an "angle of field". However, the claims do not define "angle of field" or describe it in relation to the other parts of the system.

Claim Objections

9. Claim 23 is objected to because of the following informalities: In line 7, the word "directio" is misspelled. Appropriate correction is required.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 1 and 2 stand rejected under 35 U.S.C. 102(b) as being anticipated by Schmidt (US 6,088,134).

Regarding claim 1, Schmidt discloses a scanning system comprising an optical element 62 that conveys image information onto a detector array 25. Optical element 62 includes a plurality of reflecting surfaces 32,33,42. The reflecting surfaces redirect

incident light through different respective angles of emergence. Reflecting surfaces 32 and 33 are curved. (See Fig. 6b and column 9, lines 21-27.) Any angle formed when a light ray intersects an optical surface could be called an "angle of field".

Regarding claim 2, the optical element illustrated in Fig. 6b of Schmidt redirects incident light originating at a scan object plane 37 such that it emerges from the optical element perpendicular to its incident direction.

12. Claims 1, 2, 4, 5, 10, 13, 15, 16, and 22 stand rejected under 35 U.S.C. 102(b) as being anticipated by Imamura (US 4,769,718).

Regarding claim 1, Imamura discloses an imaging processing apparatus having means for producing image information on a line sensor. The apparatus comprises a reflector 3 as an optical element. The reflector possesses a plurality of reflecting surfaces, some of which are curved. Each surface receives light from a light source 1 at different angles of incidence. The reflector effects multiple reflections until light emitted by the light source emerges from the reflector in the direction of the document table and picture. (See Figs. 2, 4, and 5.) Any angle formed when a light ray intersects an optical surface could be called an "angle of field".

Regarding claim 2, Fig. 2 of Imamura illustrates a light source that emits light in multiple directions, yet the reflector redirects this light in a different direction of emergence onto picture 5.

Regarding claim 4, Imamura discloses an image processing apparatus comprising a document table 109 on which a picture 5 to be imaged is placed, a photodetecting sensor 4, and a reflector 3 as an optical element. The sensor 4 may

have "an elongated narrow light-receiving surface". In other words, it may be a line sensor. The reflector possesses a plurality of reflecting surfaces, some of which are curved. Each surface receives light from a light source 1 at different angles of incidence. The reflector effects multiple reflections until light emitted by the light source emerges from the reflector in the direction of the document table and picture. (See Figs. 2, 4, and 5.) Any angle formed when a light ray intersects an optical surface could be called an "angle of field".

Regarding claim 5, Fig. 2 of Imamura illustrates a cross section of the image processing apparatus. The plane of the cross section, in which incident light beams from the light source are pictured, is perpendicular to the sensor. Hence, the bending direction of the reflector optical element is perpendicular to the sensor.

Regarding claim 10, the light redirected by reflector 3 originates at light source 1. Hence, it does not include image information of an original document or picture.

Regarding claim 13, the internal medium of reflector 3 is air.

Regarding claims 15 and 16, the surfaces making up reflector 3 intersect one another and are continuous. Hence, portions of the reflector that reflect light counter-clockwisely are continuous, and portions of the reflector that reflect light clockwisely are continuous. In Fig. 2, the upper and left portion of reflector 3 could be called a minus, clockwisely-deflecting surface, and the lower and right portion of reflector 3 could be called a plus, counter-clockwisely deflecting surface.

Regarding claim 22, Imamura discloses that sensor 4 may have "an elongated narrow light-receiving surface so as to conform the width of an optical image of a picture

to be read". Meanwhile, reflector 3 is structured to direct a narrow angle (in a direction perpendicular to the elongated surface of sensor 4) light beam onto original image 5. It follows that the beam width of the light exiting reflector 3 is small compared to the beam width in a line direction of sensor 4.

13. Claim 34/4,5 is rejected under 35 U.S.C. 102(b) as being anticipated by Imamura. Imamura is directed to a system for performing "color compensation" on an original document containing "a marked area of ... color". (See column 4, lines 15-35.)

Claim Rejections - 35 USC § 103

14. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claim 14 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Imamura in view of Schmidt (US 6,088,134). Imamura discloses all claim limitations

except that the internal medium of reflector 3 is optically transparent glass or plastic. It is well known to construct an optical element such that it has an internal medium of optically transparent solid material as taught by Schmidt. Schmidt discloses an optical element 62 used to direct image information onto a sensor. The element is formed of a solid optical material, of which glass and plastic are two clear examples. Absent any showing of criticality, the internal medium employed in the optical element in Imamura would have been obvious to one of ordinary skill in the art at the time of invention in view of production cost and performance requirements.

17. Claims 23, 25, and 26 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Imamura (US 4,769,718).

Regarding claims 23 and 26, Imamura discloses an image processing apparatus comprising a document table 109 on which a picture 5 to be imaged is placed, a photodetecting sensor 4, and a reflector 3 as an optical element. The sensor 4 may have "an elongated narrow light-receiving surface". In other words, it may be a line sensor. The reflector possesses a plurality of reflecting surfaces, some of which are curved. Each surface receives light from a light source 1 at different angles of incidence. The reflector effects multiple reflections until light emitted by the light source emerges from the reflector in the direction of the document table and picture. (See Figs. 2, 4, and 5.) Any angle formed when a light ray intersects an optical surface could be called an "angle of field". The reflector of Imamura is a type of reflecting mirror. Hence, Imamura teaches the use of a reflecting mirror in an image processing apparatus. While Imamura does not disclose a reflecting mirror in addition to reflector 3, it would have been

obvious to one of ordinary skill in the art at the time of invention to arrange additional reflecting mirrors in view of the relative arrangement of the light source, original document, and sensor.

Regarding claim 25, Fig. 2 of Imamura illustrates a cross section of the image processing apparatus. The plane of the cross section, in which incident light beams from the light source are pictured, is perpendicular to the sensor. Hence, the bending direction of the reflector optical element is perpendicular to the sensor.

18. Claim 34/23,25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Imamura as applied to claims 23 and 25 above. Imamura is directed to a system for performing "color compensation" on an original document containing "a marked area of ... color". (See column 4, lines 15-35.)

Allowable Subject Matter

19. Claims 3, 7-9, 11, 12, 17-21, 27, and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Allowable subject matter was indicated in a previous Office Action.

Claim 34/7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 29-33 are allowed. Reasons for allowance were provided in a previous Office Action.

Claim 34/33 is allowed.

New claims 35-44 correspond to old claims 3, 7-9, 11, 12, and 17-21, rewritten in independent form. As such, they are allowed.

Conclusion

20. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). Applicant's amendment necessitated all new ground(s) of rejection presented in this Office action.

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David C. Meyer whose telephone number is 703-305-7955. The examiner can normally be reached on M-F 8:30-5:30.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Porta can be reached on 703-308-4852. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0935.

DCM
November 25, 2003



DAVID PORTA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800